



Loopcard

Thank you for purchasing this Loopcard kit, the do-it-yourself lo-fi looper.

Record your voice, an instrument, the neighbor's dog or any sound with the built-in microphone !

Play back and loop your recordings with the PLAY and LOOP functions !

Create new sounds with the SPEED function and control the speed of recording and playback with the light sensor !

The Loopcard is an electronic musical instrument designed by Jean-Baptiste Lévéque, around the **ISD1820** sound recording module. This document will provide all the information needed to build and use your Loopcard. For any inquiries, feel free to write at : leveque.jeanbaptiste@gmail.com

THIS KIT SHOULD NOT BE BUILT WITHOUT ADULT SUPERVISION

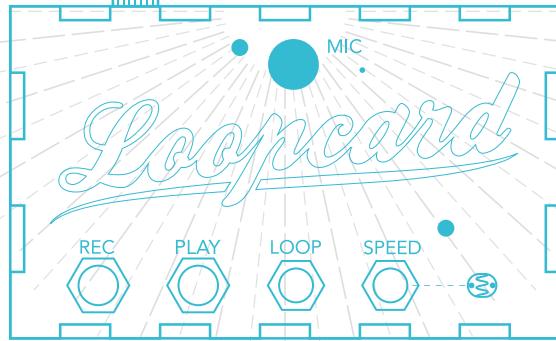
A word of the designer

With the Loopcard, I wanted to design an original and open instrument, both easy to build and to use.

Its minimal interface was designed to be as intuitive as possible. It offers a chance to experience the building blocks of electronic music: sampling, looping and live sound manipulation.

HOW TO USE YOUR LOOPCARD

AUDIO



AUDIO : The audio output. You can plug in headphones, speakers, etc. This is a mono output. Sound will only come out of the left side on a stereo system.

MIC : The built-in microphone. Talk in it or point it toward the sound source you want to record.

REC : Hold this button and talk in the microphone to record. Recording stops when you let go of the button or when memory is full (10 seconds approx.). Each new recording will erase the previous one (no overdubbing).

PLAY : Hold this button to play back your recording.

LOOP : Turn this switch on to play your recording in an endless loop. Keep this switch off when recording or when you are not using your Loopcard.

SPEED : Turn this switch on to activate the light sensor (photodiode) on the right. The amount of light this sensor gets will change both the playback and recording speed. Lot of light will speed up playback and shorten recording time (but with a better sound quality). Less light will slow down playback and lengthen recording time (but with a poorer sound quality).

Try waving your hand in front of the sensor, obscuring it during playback and recording to create really weird sounds !

THIS KIT CONTAINS

1x wooden enclosure (7 pieces)
1x ISD1820 sound module
1x 2*AAA battery holder
1x 1/8 inch female jack socket
2x ON/OFF toggle switches
2x momentary push buttons
1x 5539 photodiode
1x 470K resistor

TOOLS NEEDED

Soldering iron and solder
Set of pliers : cutting, flat and stripping
Hot glue gun or superglue
Flat headed screwdriver and small wood file*
* : optional

NOT INCLUDED IN THIS KIT

2x AAA batteries, 1/8 inch audio cable and monitoring system (earbuds, amplified speaker, etc.)

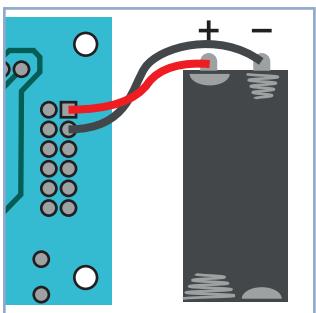
A FEW TIPS FOR BUILDING THIS KIT :

- Find a suitable place to solder : quiet with a large clean surface. Because of solder fumes, keep the room well ventilated.
- Read all the instructions before starting. Make sure you have all the components and tools listed above. Read the instructions of the tools you will use, such as the soldering iron.
- Solder the component on the back of the sound module, as shown on the schematics.
- Before soldering, mount the components on the enclosure faceplate. This will help you cut the right length needed for the wires. Wires that are too long can be as inconvenient as wires that are too short !
- Solder wires at a 90° angle to the components legs to save space in the enclosure.
- Depending on your soldering skills, you might want to watch tutorial videos on soldering and practice on old components.
- You can test your circuit between steps, but remember to always remove the batteries when soldering !

Watch the video tutorial :

www.jeanbaptistelevèque.fr → « Instruments »

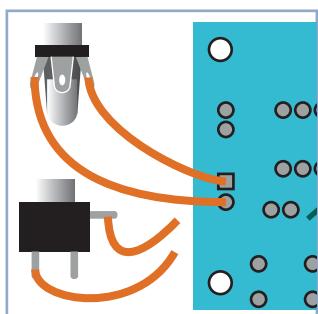
Ready ? Let's go ! 



1- POWER

Solder one wire between the positive leg of the battery holder and the **VCC** solder point on the module, and one wire between the negative leg and the **GND** point. Be careful of the polarity!

Put the batteries in and hold the **REC** button. A red led should light up. If not, check your connections and the batteries.



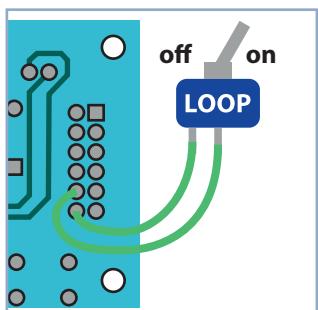
2- AUDIO OUTPUT

Solder two wires between the outer legs of the jack socket and the two points of **SP1** (the white connector on the module). No polarity here, you can solder them any way you want.

Depending on the jack model, the legs may look different. Refer to the schematic to know how to solder your jack.

TEST YOUR CIRCUIT

- Plug headphones or amplified speakers into the audio jack.
- Hold the **REC** button and speak in the microphone. Let go of the button.
- Press **PLAY**. You should hear your recording in full.
- Press and hold **PLAYL**. You should hear your recording as long you hold the button.



3- LOOP

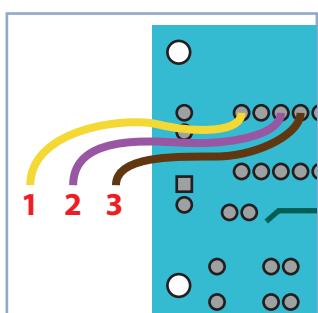
Solder two wires on the legs of a toggle switch. Solder the two other ends of the wires on the **P-E** points on the module. These points are located on the same two-columns ensemble of points where **VCC** and **GND** are.

Test the toggle switch. One position starts playing and looping your recording, the other stops it.

REMOVE THE CHIP

Carefully remove the **ISD** chip from its holder. Use a plier or a small flat-headed screwdriver, to progressively lever the chip out of his holder from each side.

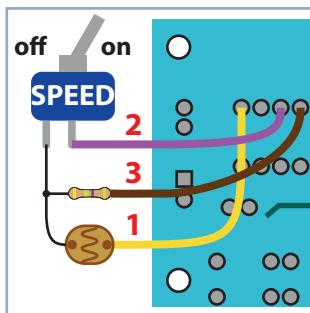
Note the orientation of the chip with its writing and circular markings. Keep it safe in a little cup or a tray while you finish the circuit.



4A - SPEED

Solder 3 wires on 3 the points of the chip holder, as shown on the schematic. Use different wire colors and note how they are numbered.

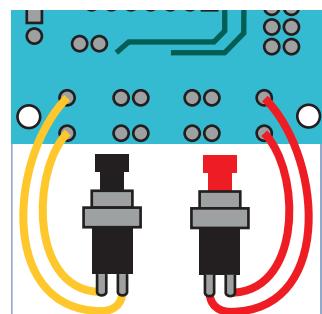
Integrated circuits such as the **ISD** chip are very sensitive to heat. We removed it from its support so that we can solder on it without damaging the chip.



4B - SPEED

Mount the other toggle switch and the photoresistor on the enclosure faceplate. The switch goes in the **SPEED** hole and the photoresistor legs go through the two small holes on the right.

Directly solder one leg of the photoresistor and one leg of the resistor to one leg of the switch. Solder the wires following the schematic.

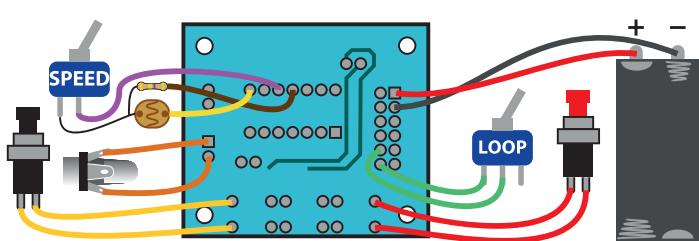


5- REC and PLAY

To replace the small buttons on the module, solder the two buttons on the **REC** and **PLAYL** points on the module using two pair of wires, following the schematic. Again, no polarity to worry about here.

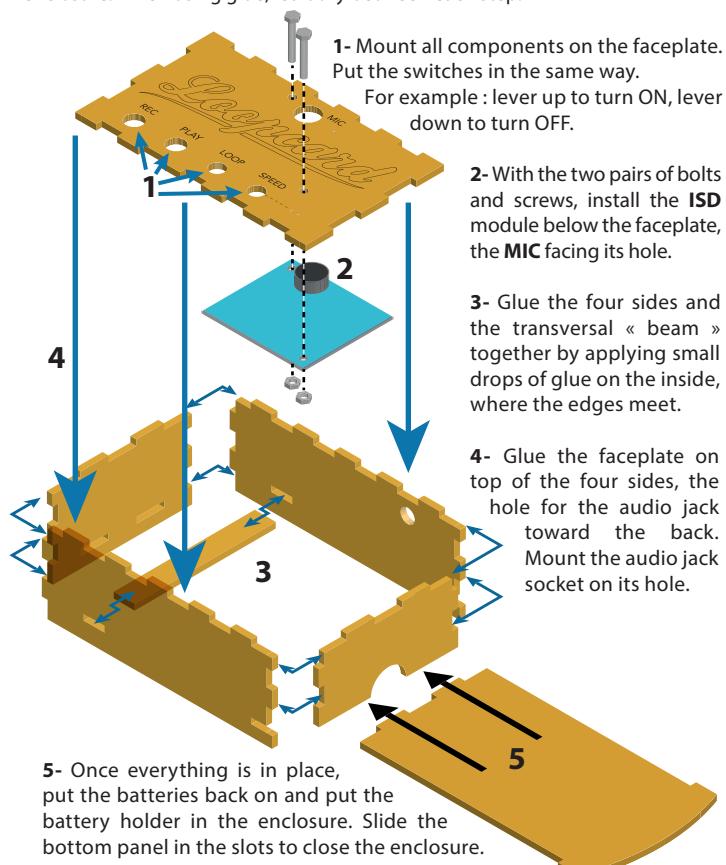
Your circuit is complete ! Put the batteries and the **ISD** back on its support, and try the various switches and buttons.

THE FINAL CIRCUIT



BUILDING THE ENCLOSURE

Before getting started, you can use adhesive tack to temporarily assemble your enclosure. When using glue, let it dry between each step.



Do not glue the bottom panel !

You will need to remove it for changing the batteries, for repairing or modifying your Loopcard.